

IN THE CLAIMS

1. (currently amended) An electronic transmission apparatus, comprising:

first and second communication means ~~to be connected~~ to a signal transmission line, ~~wherein said the~~ signal transmission line ~~interconnectings~~ a transmitting electronic device to said first communication means and connecting a receiving electronic device to said second communication means, said first communication means receiving an encrypted signal from the transmitting electronic device over the signal transmission line;

authentication process means for executing a first authentication process with ~~said the~~ transmitting electronic device via said first communication means and the signal transmission line, said first communication means receiving first key information from the transmitting electronic device over the signal transmission line based on a result of the first authentication process;

decryption means for decrypting ~~an the~~ encrypted signal using the first key information, said authentication process means supplying the first key information to said decryption means based on the result of the first authentication process ~~transmitted by said transmitting electronic device;~~

processing means for executing an ~~operation process~~ with ~~a the~~ decrypted signal ~~obtained provided~~ by decrypting ~~said encrypted signal at~~ said decryption means, said processing means including a section operable to display or record the decrypted signal; ~~wherein said authentication process means supplies key information for decrypting said encrypted signal supplied from said transmitting electronic device based on a result of said first authentication process, said first communication means supplies said~~

~~encrypted signal supplied from said transmitting electronic device connected through said signal transmission line to said decryption means and said second communication means, and~~

~~said second communication means enables said receiving electronic device to receive said encrypted signal and said key information and to executione of a second authentication process with said the receiving electronic device over the signal transmission line; a section configured to receive the decrypted signal and display or record the received decrypted signal;~~

~~encryption means for re-encrypting said the decrypted signal using second key information, said authentication process means supplying the second key information to said encryption means and for supplying said re-encrypted signal to said second communication means; and~~

~~signal switching means for selecting, for output to said second communication means, one of said the encrypted signal transmitted by said transmitting electronic device and said the re-encrypted signal by said encryption means in response to said a result of the second authentication process, said first communication means supplying the encrypted signal to said signal switching means, said encryption means supplying the re-encrypted signal to said switching means;~~

~~said authentication process means supplying the first key information to said second communication means when said signal switching means selects the encrypted signal and supplying the second key information to said second communication means when said signal switching means selects the re-encrypted signal;~~

~~said second communication means transmitting the first or second key information and the selected one of the~~

encrypted signal and the re-encrypted signal over the signal transmission line to the receiving electronic device.

2. (currently amended) The electronic transmission apparatus according to claim 1, wherein

said authentication process means supplies the first or second key information for authentication of said receiving electronic device and decryption of said encrypted signal from said transmitting electronic device to said the receiving electronic device based on a the result of the said-second authentication process.

3. (cancelled)

4. (currently amended) The electronic transmission apparatus according to claim 1, wherein

said authentication process means executes said-the second authentication process with said-the receiving electronic device through-via said receiving-second communication means and the signal transmission line, and supplies to said-receiving-electronic-device said-the first or second key information for decrypting said-the selected one of the encrypted signal and the re-encrypted signal selected by said signal switching means to the receiving electronic device via said second communication means and the signal transmission line based on a-the result of said the second authentication process.

5. (currently amended) The electronic transmission apparatus according to claim 4, wherein

the a-signal-selecting operation of-carried out by said signal switching means is executed-based on a selection signal supplied from-said-by the transmitting electronic device through-via said first communication means and the signal transmission line.

6. (currently amended) The electronic transmission apparatus according to claim 4, further comprising:

operation input means for ~~conducting a~~ controlling the switching operation of said signal switching means.

7. (currently amended) A signal transmission method, ~~comprising the steps of:~~

executing a first authentication process with a transmitting electronic device ~~connected via~~ over a signal transmission line ~~for connecting said transmitting electronic device and a receiving electronic device;~~

receiving an encrypted signal from the transmitting electronic device over the signal transmission line;

receiving first key information from the transmitting electronic device over the signal transmission line based on a result of said first authentication process;

decrypting the encrypted signal using the first key information;

executing an operation ~~process using a~~ the ~~decrypted signal, the process including displaying or recording the decrypted signal~~ obtained by decrypting an encrypted signal supplied from said transmitting electronic device with key information supplied from said transmitting electronic device based on a result of said first authentication process;

executing a second authentication process with ~~said a~~ receiving electronic device ~~connected via said~~ over the signal transmission line; ~~displaying or recording said decrypted signal;~~

re-encrypting said the decrypted signal using second key information; routing the re-encrypted signal to another device via another signal transmission line; and

selecting, for transmission to said the receiving electronic device, one of said the encrypted signal and

~~said the~~ re-encrypted signal in response to ~~said a~~ result of the second authentication process;

transmitting the selected one of the encrypted signal and the re-encrypted signal over the signal transmission line to the receiving electronic device; and

transmitting the first key information to the receiving electronic device via the signal transmission line when the encrypted signal is selected, and transmitting the second key information to the receiving electronic device via the signal transmission line when the re-encrypted signal is selected.

8. - 9. (cancelled)

10. (currently amended) The signal transmission method according to claim 7, wherein

said step of selecting one of either ~~said re-the~~ encrypted signal or ~~said the re-~~encrypted signal ~~supplied from said transmitting electronic device~~ is executed based on a signal ~~supplied~~ received from ~~said the~~ transmitting electronic device.

11. (currently amended) The signal transmission method according to claim 7, wherein

said step of selecting one of either ~~said re-the~~ encrypted signal or ~~said the re-~~encrypted signal ~~supplied from said transmitting electronic device~~ is executed based on an operation result of an operation input means.

12. - 17. (cancelled)